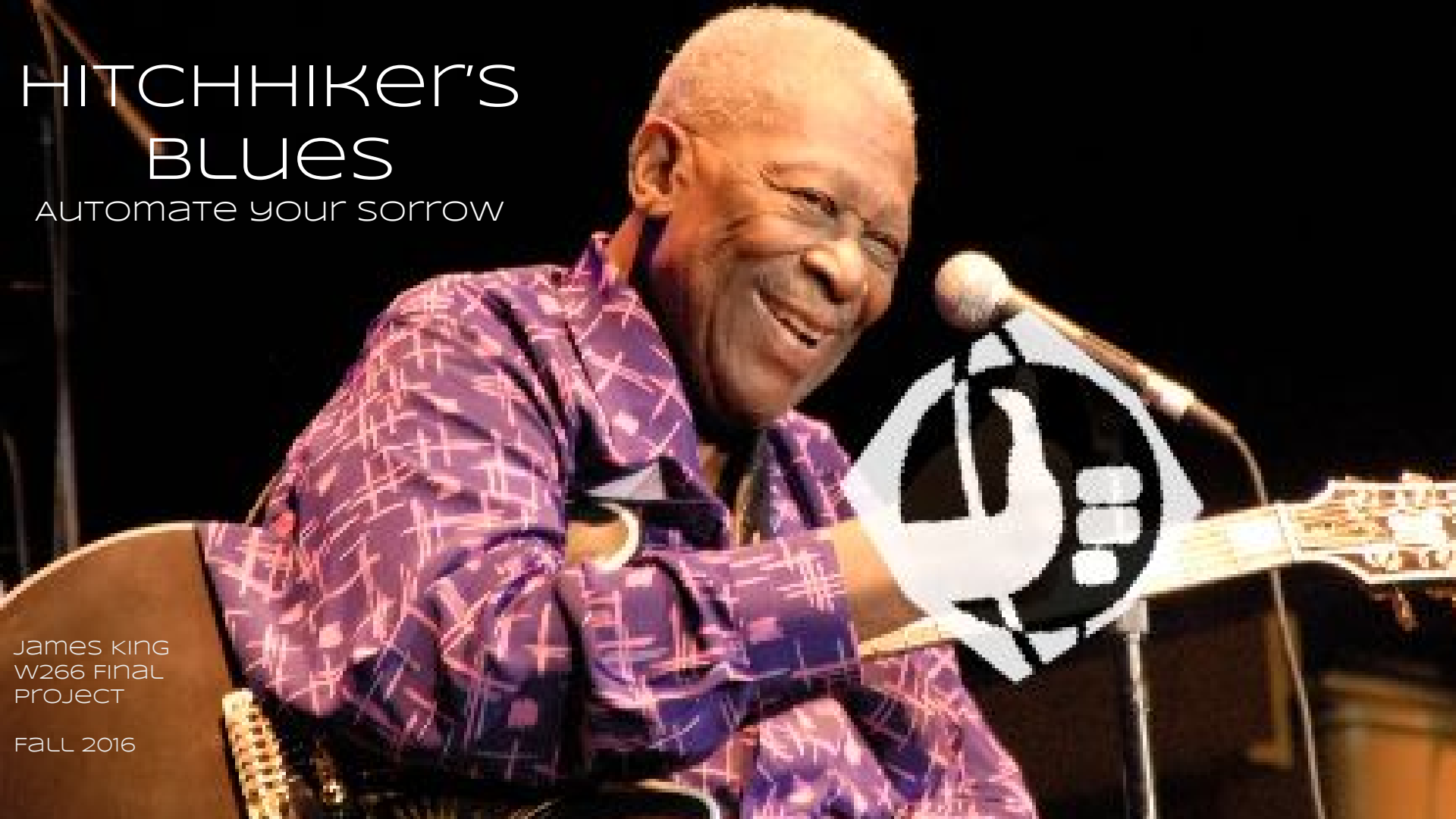


HITCHHIKER'S BLUES

Automate your sorrow

James King
W266 Final
Project

FALL 2016



Chatbox Game: Name that Musician

When you see a musician pictured

The first to type his name gets +30 to
street-cred

The Oxford Text Archive Blues Lyric Poetry Corpus

- Lyrics from 2091 blues songs recorded before 1940
- Primarily African American Authors
- Available [here](#)



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Blues lyric poetry

Title	Blues lyric poetry [Electronic resource] : an anthology / Michael Taft
Editor	Taft, Michael, 1947- (ed.)
Availability	Distributed by the University of Oxford under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License. Download: zip
Editorial Practice	Encoding format: Unknown markup
OTA keywords	Songs Anthologies Linguistic corpora
LC keywords	American poetry -- African American authors American poetry -- 20th century Blues (Music) -- To 1931 Blues (Music) -- 1931-1940 African American singers American poetry -- African American authors
Extent	<ul style="list-style-type: none">• designation: Text data• size: (2 files : ca. 767,718 kilobytes)

Typical Example (Randomly chosen)

told me late last fall
 you never had no man at all
well you got more men
 than a two-ton truck can haul

told me to my face
 that a good man in my place

told me it was early last spring
 when the birds began to sing
well it's the last chance
 kid to be around here with me

i told you early last june
 when the flowers began to bloom
you can't do no better
 another good girl can take your room

go and heist your window
 let your curtain down
well you can't tell
 there may be some joker around

go and put on your nightgown
 baby let's we go lie down
well it's the last chance
 shaking in bed with you



Very structured format
(but with some variations)

- 4 lines per verse
- Lines 2/4 rhyming
- Avg 6.5 syllables per line
- Colorful vocabulary
- Frequent use of both vernacular English and “fudged” grammar to fit the format

Two Pretty Good NLP Models for Lyric Generation

Models

- Trigrams
- LSTM RNN Over the letters

Improvements

- probabilistic syllable structuring
- rhyme forcing



Trigram Model (Trained on Corpus Words)

that me and my poor heart

was made of steel my baby

but your arms i need somebody

hear me talking i maybe



LSTM Model (Trained on Corpus *Letters*)



and i couldn't see off to care
mama to change your good gal
and it all the one i can see
where you tell off all the shall

HHGG Primed LSTM



Primed with:

“so long and thanks for all
the fish”

when i have a blues
whender feeling all look
some dadays not me
thirrise to be has in my cook

Questions?



Backups



Data Cleanup

ain't going to give you
no more cherry ball
well you might get mad now
show your santa claus

rocks and gravel
??? road
takes a get-along woman
satisfy my soul

see you dead now
in some cedar grove
than to see some man now
bothering with your clothes

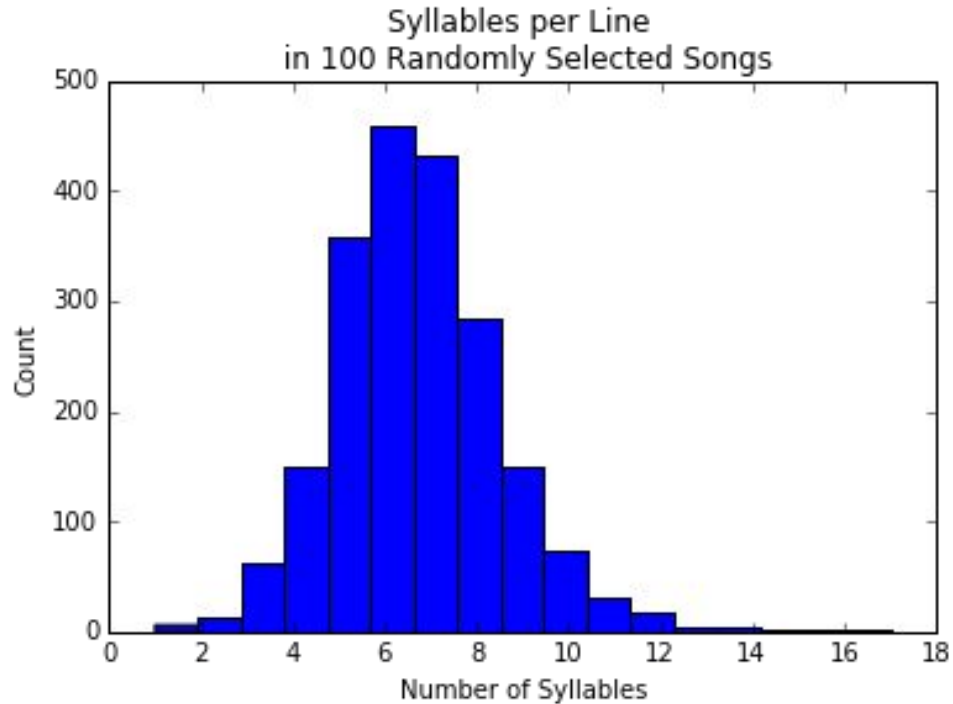
ain't no driver
but the driver's son
i can do your driving
till that driver comes

- Inaudible words transcribed with “”???”
- Many phrases transcribed with hyphens
- Contractions used to reduce syllables
- Variations captured with word sets

i'm singing this tune
i ain't going to [play, pick] it no more
jim strainer killed poor lula
i'm booked out and bound to go



Blues Corpus Syllabus Structure



Rhyme Forcing

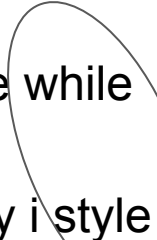
Carnegie Mellon U. has published a rhyming dictionary. NLTK has an API to it.

Basic Strategy: Alter language model to only include rhyming words

To catch all cases, 5 strategies are needed

Type 1: Language model generated a rhyming word.
Keep it.

just see if i feel like
voting fall in line while
i play this rag of mine
some sweet day i style



Rhyme Forcing

Type 2: Use the intersection trigram language model with rhyming words to pick a “good” rhyme which follows the last-line priors.

street world that's go goes i
don't need no bail she **sold**
all their snitching was fixed
nineteen hundred and **cold**


Rhyme Forcing

```
>> pronouncing.rhymes('from')[25:
```

```
[u'grum',  
u'gum',  
u'gumm',  
u'hohum',  
u'hum',  
u'hum',  
u'klumb',  
u'krum',  
u'krumm',  
u'krumme']
```

Type 3: Make a bigram model of all rhymes used at the end of lines in the blues corpus & choose based on frequency of use

told good the is going
to write a letter from
home give me my baby
tell me mama hum



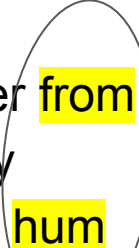
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u'hum',  
u'hum',  
u'klumb',  
u'krum',  
u'krumm',  
u'krumme']
```

Type 4: Find all rhyming words in the dictionary. Choose a rhyming based on frequency in the blues corpus

told good the is going
to write a letter from
home give me my baby
tell me mama hum



Rhyme Forcing

```
>> pronouncing.rhymes('elephant')
```

```
[]
```

Type 5: Every word rhymes with itself

bed now i'm just as happy

woman as an elephant

baby my baby she

loved to dance it there elephant

Unexpected Trigram Model Problems

body from his jo jo
jo jo jo jo said she
didn't want ooo me
nohow she swore sure
guarantee

